



A.D. 1873, 15th APRIL. N° 1354.

Stethoscope.

LETTERS PATENT to Thomas Paton Hawksley, of No. 4, Blenheim Street, New Bond Street, in the County of Middlesex, Surgical Instrument Maker, for the Invention of “**AN IMPROVED CONSTRUCTION OF STETHOSCOPE.**”

Sealed the 5th September 1873, and dated the 15th April 1873.

PROVISIONAL SPECIFICATION left by the said Thomas Paton Hawksley at the Office of the Commissioners of Patents, with his Petition, on the 15th April 1873.

I, THOMAS PATON HAWKSLEY, of No. 4, Blenheim Street, New Bond Street, in the County of Middlesex, Surgical Instrument Maker, do hereby declare the nature of the said Invention for “**AN IMPROVED CONSTRUCTION OF STETHOSCOPE,**” to be as follows:—

This Invention for an improved construction of stethoscope consists in making the part that is applied to the chest or “collector” of gun

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metal, brass, iron, or any other metal. This collector is made in the shape of a cone, with its edge turned upwards and outwards, so as to protect the skin of the patient from abrasion when being applied. The collector being soldered to one end of the tube which is also made of metal, at the other end of which is the "ear plate" or "vibrator" to be 5 applied to the ear during auscultation. This ear plate is made of ebonite or vulcanite, conveniently curved to fit the ear of the physician, and is attached by rivets, screws, or any other means to the opposite end of the tube to which the collector is fixed.

The advantages of this improved stethoscope are its superior acoustical 10 qualities to enable the physician to hear more particularly sounds heard from the chest, and for its greater durability by reason of its being made of metal and ebonite or vulcanite.

SPECIFICATION in pursuance of the conditions of the Letters Patent filed by the said Thomas Paton Hawksley in the Great Seal Patent 15 Office on the 3rd October 1873.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, THOMAS PATON HAWKSLEY, of No. 4, Blenheim Street, New Bond Street, in the County of Middlesex, Surgical Instrument Maker, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her 20 Letters Patent, bearing date the Fifteenth day of April, in the year of our Lord One thousand eight hundred and seventy-three, in the thirty-sixth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Thomas Paton Hawksley, Her special licence that I, the said Thomas Paton Hawksley, my executors, administrators, 25 and assigns, or such others as I, the said Thomas Paton Hawksley, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain 30 and Ireland, the Channel Islands, and Isle of Man, an Invention for "AN IMPROVED CONSTRUCTION OF STETHOSCOPE," upon the condition (amongst others) that I, the said Thomas Paton Hawksley, my executors or ad-

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ministrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal
5 Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said Thomas Paton Hawksley, do hereby declare the nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained
10 in and by the following statement thereof, reference being had to the accompanying Sheet of Drawings, and to the letters and figures marked thereon, that is to say :—

The principal object of my Invention is to form an improved stethoscope of materials that will more perfectly concentrate the sound it
15 transmits, and prevent the slightest amount of sound being lost, and will enable the physician or operator to determine with greater certainty the nature, conditions, and exact seat of various diseases of the body produced by the movements of the different organs affected by the disease from those which belong to their healthy functions, and consists
20 in making the part that is applied to the chest, termed the “collector,” of very thin gun metal, brass, iron, or other suitable metal. This collector or chest end is made in the shape of a cone, with the edge at its base curved smoothly round upwards, and then turned inwards over its outer edge, so that it will not be at all disagreeable to the feelings, and protect
25 the skin of the patient to whom it is applied from abrasion. The collector thus formed is soldered or otherwise fastened to one end of a cylindrical tube also made of thin gun metal, brass, iron, or other suitable metal, and polished inside. At the top or opposite end of the tube to which the collector is fixed is attached the “ear plate” or “vibrator”
30 to be applied to the ear of the physician or operator during auscultation, by means of a flange placed over the end of the tube and soldered to it, and also fastened to the ear plate or vibrator by screws, rivets, or other mechanical appliance, the end of the tube passing through to the opposite side of the ear plate. The ear plate or vibrator is made of
35 ebonite, vulcanite, or other analogous material conveniently curved to fit the ear, so that the aperture of the instrument will be in direct communication with the internal ear of the physician or operator.

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But in order that my Invention may be more clearly understood I will proceed to describe the same by the aid of the accompanying Sheet of Drawings, in which Fig. 1 is a side view of my improved stethoscope, and Fig. 2 is a sectional elevation of the same.

a is the part termed the collector, made of thin gun metal, brass, iron, 5 or other suitable metal. This collector is made in the shape of a cone, about one inch in length, the $\frac{7}{100}$ part of an inch in thickness, and $\frac{1}{4}$ of an inch in diameter at its inner end, or that part next the tube, and about one inch in diameter at the part which is to be applied to the chest of the patient. The edge of the collector at its widest end 10 is smoothly curved round upwards, and then turned inwards, so as to protect the skin of the patient from abrasion during the operation. To this collector is soldered or otherwise attached the tube b also formed of thin gun metal, brass, iron, or other suitable metal of the same thickness as the collector. To the other end of the tube b is fastened a 15 flange c , by which the ear plate or vibrator d is fixed to the tube, and which ear plate is to be applied to the ear of the physician or operator during auscultation. The flange c is soldered or otherwise fastened to the tube b , and is attached to the ear plate or vibrator d by screws, rivets, or other well known mechanical contrivance. The end of the 20 tube b passes through to the opposite side of the ear plate or vibrator d , which is made of ebonite, vulcanite, or other analogous material $\frac{1}{2}$ part of an inch in thickness, and about $2\frac{3}{4}$ inches in diameter.

Although I do not limit myself to the above proportions I have found from continual experience and a long series of experiments the above 25 described dimensions and principles of construction of my improved stethoscope to answer best.

The advantages obtained in the construction of my improved stethoscope are that from its superior acoustical qualities it will enable the physician or operator better to elucidate the diagnosis of certain diseases 30 with far more precise and certain results than have hitherto been obtained, by reason of that part of the instrument formed in the shape of a cone called the collector and the tube being made of metal polished inside, approaching most nearly to a wet surface, which I find conducts sound much better than a dry unpolished surface, and the ear plate or 35 vibrator of ebonite, vulcanite, or other similar substance, and also its extreme lightness and durability.

Hawksley's Improved Construction of Stethoscope.

Having now described the nature of my said Invention, and the manner in which the same is to be performed, I claim the improved construction of stethoscope substantially as herein shewn and described.

5 In witness whereof, I, the said Thomas Paton Hawksley, have hereunto set my hand and seal, this First day of October, in the year of our Lord One thousand eight hundred and seventy-three.

THOS. P. HAWKSLEY. (L.S.)

LONDON:

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FIG. 1.

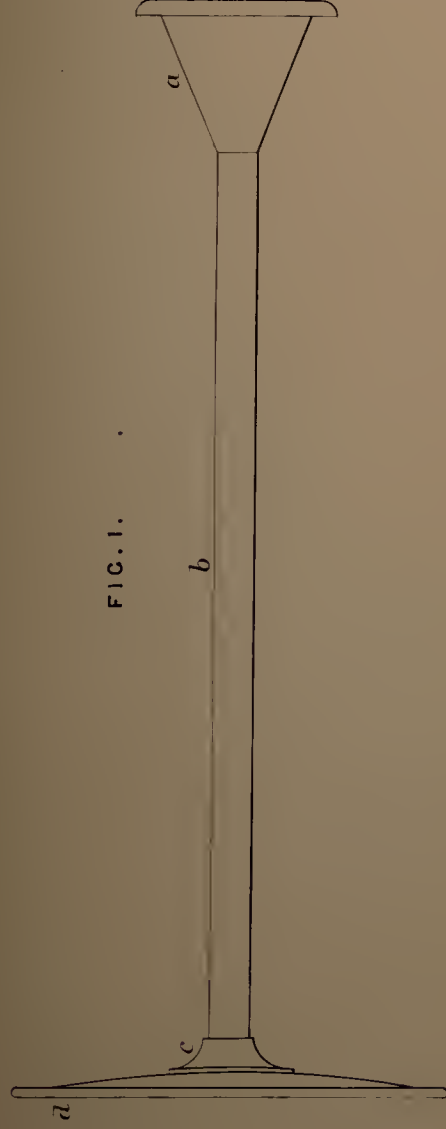
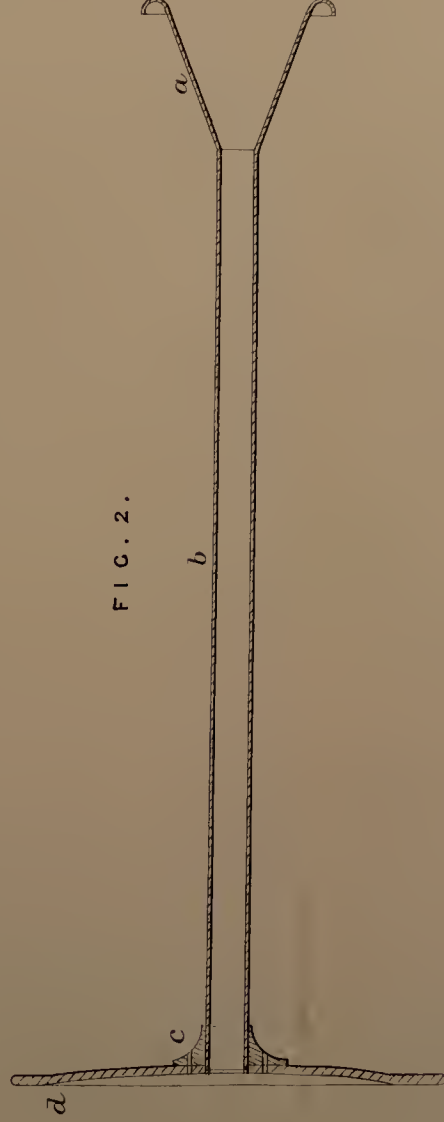


FIG. 2.



The filed drawing is not colored.

Drawn on Stone by Malby & Sons

